

## WHAT IS CLAIMED IS:

1. A pharmaceutical composition comprising a pharmaceutical agent and a pharmaceutically acceptable carrier, wherein the pharmaceutically acceptable carrier comprises albumin in an amount effective to reduce one or more side effects of administration of the pharmaceutical composition into a human, and wherein the pharmaceutically acceptable carrier comprises deferoxamine in an amount effective to inhibit microbial growth in the pharmaceutical composition.
2. The pharmaceutical composition of claim 1, wherein the pharmaceutical agent is selected from the group consisting of anticancer agents, anesthetics, antimicrotubule agents, agents to treat cardiovascular disorders, antihypertensives, anti-inflammatory agents, anti-arthritic agents, antiasthmatics, analgesics, vasoactive agents, immunosuppressive agents, antifungal agents, antiarrhythmic agents, antibiotics, and hormones.
3. The pharmaceutical composition of claim 2, wherein the pharmaceutical agent is selected from the group consisting of paclitaxel, docetaxel, taxanes, camptothecin, propofol, amiodarone, cyclosporine, rapamycin, amphotericin, liothyronine, epothonones, colchicines, thyroid hormones, vasoactive intestinal peptide, corticosteroids, melatonin, tacrolimus, mycophenolic acids, and derivatives thereof.
4. The pharmaceutical composition of claim 3, wherein the pharmaceutical agent is propofol.
5. The pharmaceutical composition of claim 1, wherein the pharmaceutical composition is a liquid and comprises from about 0.1% to about 25% by weight of albumin.
6. The pharmaceutical composition of claim 5, wherein the pharmaceutical composition comprises about 0.5% to about 5% by weight of albumin.
7. The pharmaceutical composition of claim 5, wherein the pharmaceutical composition is dehydrated.
8. The pharmaceutical composition of claim 6, wherein the pharmaceutical composition is lyophilized.

9. The pharmaceutical composition of claim 1, wherein the pharmaceutical composition comprises a mesylate salt of deferoxamine.

10. The pharmaceutical composition of claim 9, wherein the pharmaceutical composition is a liquid and comprises from about 0.0001% to about 0.5% by weight of deferoxamine mesylate.

11. The pharmaceutical composition of claim 10, wherein the pharmaceutical composition comprises about 0.1% by weight of deferoxamine mesylate.

12. The pharmaceutical composition of claim 10, wherein the pharmaceutical composition is dehydrated.

13. The pharmaceutical composition of claim 12, wherein the pharmaceutical composition is lyophilized.

14. The pharmaceutical composition of claim 1, wherein the pharmaceutical composition is an oil-in-water emulsion.

15. The pharmaceutical composition of claim 5, wherein the pharmaceutical agent is propofol.

16. The pharmaceutical composition of claim 10, wherein the pharmaceutical agent is propofol.

17. The pharmaceutical composition of claim 9, wherein the pharmaceutical agent is propofol, the propofol is present in an amount from about 0.1% to about 5% by weight, the albumin is present in an amount from about 0.1% to about 25% by weight, and the deferoxamine mesylate is present in an amount from about 0.0001% to about 0.5% by weight.

18. A pharmaceutical composition comprising a pharmaceutical agent and a pharmaceutically acceptable carrier, wherein the pharmaceutically acceptable carrier comprises albumin in an amount effective to reduce one or more side effects of administration of the pharmaceutical composition into a human, and wherein the pharmaceutically acceptable carrier comprises deferoxamine in an amount effective to inhibit oxidation in the pharmaceutical composition.

19. A method for reducing one or more side effects associated with administration of a pharmaceutical composition to a human, which method comprises administering to a human a pharmaceutical composition comprising a pharmaceutical agent and a pharmaceutically acceptable carrier, wherein the pharmaceutically acceptable carrier comprises albumin and deferoxamine.

20. The method of claim 19, wherein the pharmaceutical agent is selected from the group consisting of anticancer agents, anesthetics, antimicrotubule agents, agents to treat cardiovascular disorders, antihypertensives, anti-inflammatory agents, anti-arthritic agents, antiasthmatics, analgesics, vasoactive agents, immunosuppressive agents, antifungal agents, antiarrhythmic agents, antibiotics, and hormones.

21. The method of claim 20, wherein the pharmaceutical agent is selected from the group consisting of paclitaxel, docetaxel, taxanes, camptothecin, propofol, amiodarone, cyclosporine, rapamycin, amphotericin, liothyronine, epothonones, colchicines, thyroid hormones, vasoactive intestinal peptide, corticosteroids, melatonin, tacrolimus, mycophenolic acids, and derivatives thereof.

22. The method of claim 21, wherein the pharmaceutical agent is propofol.

23. The method of claim 19, wherein the pharmaceutical composition is a liquid and comprises from about 0.1% to about 25% by weight of albumin.

24. The method of claim 23, wherein the pharmaceutical composition comprises about 0.5% to about 5% by weight of albumin.

25. The method of claim 23, wherein the pharmaceutical composition is dehydrated.

26. The method of claim 25, wherein the pharmaceutical composition is lyophilized.

27. The method of claim 23, wherein the pharmaceutical agent is propofol.

28. The method of claim 19, wherein the pharmaceutical composition comprises a mesylate salt of deferoxamine.

29. The method of claim 28, wherein the pharmaceutical composition is a liquid and comprises from about 0.0001% to about 0.5% by weight of deferoxamine mesylate.

30. The method of claim 29, wherein the pharmaceutical composition comprises about 0.1% by weight of deferoxamine mesylate.

31. The method of claim 29, wherein the pharmaceutical composition is dehydrated.

32. The method of claim 31, wherein the pharmaceutical composition is lyophilized.

33. The method of claim 29, wherein the pharmaceutical agent is propofol.

34. The method of claim 28, wherein the pharmaceutical agent is propofol, the propofol is present in an amount from about 0.1% to about 5% by weight, the albumin is present in an amount from about 0.1% to about 25% by weight, and the deferoxamine mesylate is present in an amount from about 0.0001% to about 0.5% by weight.

35. The method of claim 19, wherein the pharmaceutical composition is administered to the human via intravenous administration, intra-arterial administration, intrapulmonary administration, oral administration, inhalation, intra-tracheal administration, intravesicular administration, intramuscular administration, subcutaneous administration, intraocular administration, intrathecal administration, or transdermal administration.

36. The method of claim 19, wherein the one or more side effects are selected from the group consisting of myelosuppression, neurotoxicity, hypersensitivity, venous irritation, inflammation, phlebitis, pain, skin irritation, and combinations thereof.

37. A method for inhibiting microbial growth in a pharmaceutical composition, which method comprises preparing a pharmaceutical composition comprising a pharmaceutical agent and a pharmaceutically acceptable carrier, wherein the pharmaceutically acceptable carrier comprises deferoxamine in an amount effective for inhibiting microbial growth in the pharmaceutical composition.

38. The method of claim 37, wherein the pharmaceutical composition comprises a mesylate salt of deferoxamine.

39. The method of claim 38, wherein the pharmaceutical composition is a liquid and comprises from about 0.0001% to about 0.5% by weight of deferoxamine mesylate.

40. The method of claim 39, wherein the pharmaceutical composition comprises about 0.1% by weight of deferoxamine mesylate.

41. The method of claim 39, wherein the pharmaceutical composition is dehydrated.

42. The method of claim 41, wherein the pharmaceutical composition is lyophilized.

43. The method of claim 37, wherein the pharmaceutical composition further comprises albumin.

44. A method for inhibiting oxidation of a pharmaceutical composition, which method comprises preparing a pharmaceutical composition comprising a pharmaceutical agent and a pharmaceutically acceptable carrier, wherein the pharmaceutically acceptable carrier comprises deferoxamine in an amount effective for inhibiting oxidation of the pharmaceutical composition.

45. The method of claim 44, wherein the pharmaceutical composition comprises a mesylate salt of deferoxamine.

46. The method of claim 45, wherein the pharmaceutical composition is a liquid and comprises from about 0.0001% to about 0.5% by weight of deferoxamine mesylate.

47. The method of claim 46, wherein the pharmaceutical composition comprises about 0.1% by weight of deferoxamine mesylate.

48. The method of claim 46, wherein the pharmaceutical composition is dehydrated.

49. The method of claim 48, wherein the pharmaceutical composition is lyophilized.

50. The method of claim 44, wherein the pharmaceutical composition further comprises albumin.

51. A method for enhancing transport of a pharmaceutical agent to the site of an infirmity, which method comprises administering to a human a pharmaceutical composition comprising a pharmaceutical agent and a pharmaceutically acceptable carrier, wherein the pharmaceutically acceptable carrier comprises albumin, and wherein the ratio of albumin to pharmaceutical agent in the pharmaceutical composition is about 18:1 or less.

52. The method of claim 51, wherein the pharmaceutical agent is selected from the group consisting of anticancer agents, anesthetics, antimicrotubule agents, agents to treat cardiovascular disorders, antihypertensives, anti-inflammatory agents, anti-arthritis agents, antiasthmatics, analgesics, vasoactive agents, immunosuppressive agents, antifungal agents, antiarrhythmic agents, antibiotics, and hormones.

53. The method of claim 52, wherein the pharmaceutical agent is selected from the group consisting of paclitaxel, docetaxel, taxanes, camptothecin, propofol, amiodarone, cyclosporine, rapamycin, amphotericin, liothyronine, epothonones, colchicines, thyroid hormones, vasoactive intestinal peptide, corticosteroids, melatonin, tacrolimus, mycophenolic acids, and derivatives thereof.

54. The method of claim 51, wherein the pharmaceutical agent is a nucleic acid sequence.

55. The method of claim 54, wherein the nucleic acid sequence is a DNA sequence

56. The method of claim 51, wherein the infirmity is selected from the group consisting of cancer, arthritis, and cardiovascular disease.

57. The method of claim 51, wherein the pharmaceutical composition is a liquid and comprises from about 0.1% to about 25% by weight of albumin.

58. The method of claim 57, wherein the pharmaceutical composition comprises about 0.5% to about 5% by weight of albumin.

59. The method of claim 57, wherein the pharmaceutical composition is dehydrated.

60. The method of claim 59, wherein the pharmaceutical composition is lyophilized.

61. The method of claim 51, wherein the ratio of albumin to pharmaceutical agent in the pharmaceutical composition is about 12:1 or less.

62. The method of claim 51, wherein the ratio of albumin to pharmaceutical agent in the pharmaceutical composition is about 9:1 or less.

63. The method of claim 51, wherein the pharmaceutical composition is administered to the human via intravenous administration, intra-arterial administration, intrapulmonary administration, oral administration, inhalation, intra-tracheal administration, intravesicular administration, intramuscular administration, subcutaneous administration, intraocular administration, intrathecal administration, or transdermal administration.

64. A method for enhancing binding of a pharmaceutical agent to a cell *in vitro* or *in vivo*, which method comprises administering to said cell *in vitro* or *in vivo*, a pharmaceutical composition comprising a pharmaceutical agent and a pharmaceutically acceptable carrier, wherein the pharmaceutically acceptable carrier comprises albumin, and wherein the ratio of albumin to pharmaceutical agent in the pharmaceutical composition is about 18:1 or less.

65. The method of claim 64, wherein the pharmaceutical agent is selected from the group consisting of anticancer agents, anesthetics, antimicrotubule agents, agents to treat cardiovascular disorders, antihypertensives, anti-inflammatory agents, anti-arthritic agents, antiasthmatics, analgesics, vasoactive agents, immunosuppressive agents, antifungal agents, antiarrhythmic agents, antibiotics, and hormones.

66. The method of claim 65, wherein the pharmaceutical agent is selected from the group consisting of paclitaxel, docetaxel, taxanes, camptothecin, propofol, amiodarone, cyclosporine, rapamycin, amphotericin, liothyronine, epoethilones, colchicines, thyroid

hormones, vasoactive intestinal peptide, corticosteroids, melatonin, tacrolimus, mycophenolic acids, and derivatives thereof.

67. The method of claim 64, wherein the pharmaceutical agent is a nucleic acid sequence.

68. The method of claim 67, wherein the nucleic acid sequence is a DNA sequence

69. The method of claim 64, wherein the cell is an endothelial cell.

70. The method of claim 64, wherein the pharmaceutical composition is a liquid and comprises from about 0.1% to about 25% by weight of albumin.

71. The method of claim 70, wherein the pharmaceutical composition comprises about 0.5% to about 5% by weight of albumin.

72. The method of claim 70, wherein the pharmaceutical composition is dehydrated.

73. The method of claim 72, wherein the pharmaceutical composition is lyophilized.

74. The method of claim 64, wherein the ratio of albumin to pharmaceutical agent in the pharmaceutical composition is about 12:1 or less.

75. The method of claim 64, wherein the ratio of albumin to pharmaceutical agent in the pharmaceutical composition is about 9:1 or less

76. The method of claim 64, wherein the pharmaceutical composition is administered to the cell *in vivo* via intravenous administration, intra-arterial administration, intrapulmonary administration, oral administration, inhalation, intra-tracheal administration, intravesicular administration, intramuscular administration, subcutaneous administration, intraocular administration, intrathecal administration, or transdermal administration.

77. A pharmaceutical composition comprising a pharmaceutical agent and a pharmaceutically acceptable carrier, wherein the pharmaceutically acceptable carrier



comprises albumin in an amount effective to reduce one or more side effects of administration of the pharmaceutical composition into a human, and wherein the ratio of albumin to pharmaceutical agent is about 18:1 or less.

78. The pharmaceutical composition of claim 77, wherein the ratio of albumin to pharmaceutical agent in the pharmaceutical composition is about 12:1 or less.

79. The pharmaceutical composition of claim 77, wherein the ratio of albumin to pharmaceutical agent in the pharmaceutical composition is about 9:1 or less.

80. A pharmaceutical composition comprising a pharmaceutical agent and a pharmaceutically acceptable carrier, wherein the pharmaceutically acceptable carrier comprises albumin in an amount effective to increase transport of the drug to the site of infirmity in a human, and wherein the ratio of albumin to pharmaceutical agent is about 18:1 or less.

81. The pharmaceutical composition of claim 80, wherein the ratio of albumin to pharmaceutical agent in the pharmaceutical composition is about 12:1 or less.

82. The pharmaceutical composition of claim 80, wherein the ratio of albumin to pharmaceutical agent in the pharmaceutical composition is about 9:1 or less.

83. The pharmaceutical composition of claim 80, wherein the infirmity is selected from the group consisting of cancer, arthritis, and cardiovascular disease.

84. The pharmaceutical composition of claim 1, wherein the ratio of albumin to pharmaceutical agent is about 18:1 or less.

85. A method for increasing the transport of a pharmaceutical agent to a cell *in vitro* or *in vivo* by combining said agent with a protein, wherein said protein binds a specific cell-surface receptor on said cell, wherein said binding of the protein-pharmaceutical agent combination with the said receptor causes the transport to occur, and wherein the ratio of protein to pharmaceutical agent is about 18:1 or less.

86. The method of claim 85, wherein the protein is albumin.

87. The method of claim 85, wherein the pharmaceutical agent is selected from the group consisting of anticancer agents, anesthetics, antimicrotubule agents, agents to treat

cardiovascular disorders, antihypertensives, anti-inflammatory agents, anti-arthritic agents, antiasthmatics, analgesics, vasoactive agents, immunosuppressive agents, antifungal agents, antiarrhythmic agents, antibiotics, and hormones.

88. The method of claim 87, wherein the pharmaceutical agent is selected from the group consisting of paclitaxel, docetaxel, taxanes, camptothecin, propofol, amiodarone, cyclosporine, rapamycin, amphotericin, liothyronine, epoethilones, colchicines, thyroid hormones, vasoactive intestinal peptide, corticosteroids, melatonin, tacrolimus, mycophenolic acids, and derivatives thereof.

89. The method of claim 85, wherein the ratio of albumin to pharmaceutical agent in the pharmaceutical composition is about 12:1 or less.

90. The method of claim 85, wherein the ratio of albumin to pharmaceutical agent in the pharmaceutical composition is about 9:1 or less.

91. A pharmaceutical composition comprising a pharmaceutical agent and a pharmaceutically acceptable carrier, wherein the pharmaceutically acceptable carrier comprises a protein in an amount effective to reduce one or more side effects of administration of the pharmaceutical composition into a human, and wherein the ratio of protein to pharmaceutical agent is about 18:1 or less.

92. The pharmaceutical composition of claim 91, wherein the ratio of protein to pharmaceutical agent in the pharmaceutical composition is about 12:1 or less.

93. The pharmaceutical composition of claim 91, wherein the ratio of protein to pharmaceutical agent in the pharmaceutical composition is about 9:1 or less.